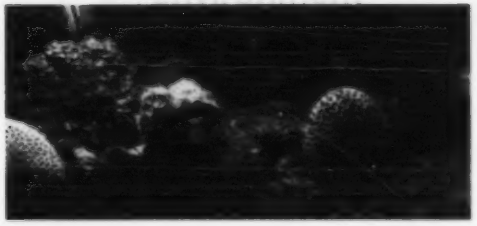
life matters

UNIVERSITY of GUELPH

CHANGING LIVES
IMPROVING LIFE



community

commerce

WE KNOW THAT THE experience of leaving home to study at university will change the life of every student who enrols here, and we are determined to guide that change in a positive direction. Caring, compassion and good citizenship are values that our students experience as surely as they acquire knowledge, evaluate new ideas and develop critical thinking skills.

University of Guelph faculty and staff have the power to change lives well beyond campus boundaries. We appreciate that our activities have a direct impact on our neighbours in the City of Guelph, and we are inspired by the University's history of knowledge transfer that has improved the lives and livelihoods of people across Ontario and Canada and, indeed, around the world.

The key word here is "improve." Our vision is to improve life, whether it be introducing a new crop variety that will increase farm revenue, publishing poetry that helps us understand what it means to live in poverty, discovering the gene responsible for a debilitating disease, finding ways to reduce schoolyard bullying or challenging our criminal justice system.

Improving life means directing University of Guelph scholarship, research and service toward the pursuit of truth — our core value as an educational institution. This journey is an intellectual one, often changing the minds of those who participate in it and creating the potential for positive change in the world. The more we learn, the more we recognize that we are on a journey through intensely interactive terrain and that the future of society and the planet depends on our understanding the complexities of that interaction. The more we learn about our world, the more we realize that its many cultures may hold the key to understanding.

As our expertise grew from food production to encompass the life sciences, the University community came to appreciate the importance of linking the humanities and social sciences into our concept of life. As a result, the University's impact on animal and human health, community-building, economic growth, culture and the

life matters

Our core value as a university is the pursuit of truth and meaning. Our responsibility to society is to share our knowledge and use our skills to improve quality of life.

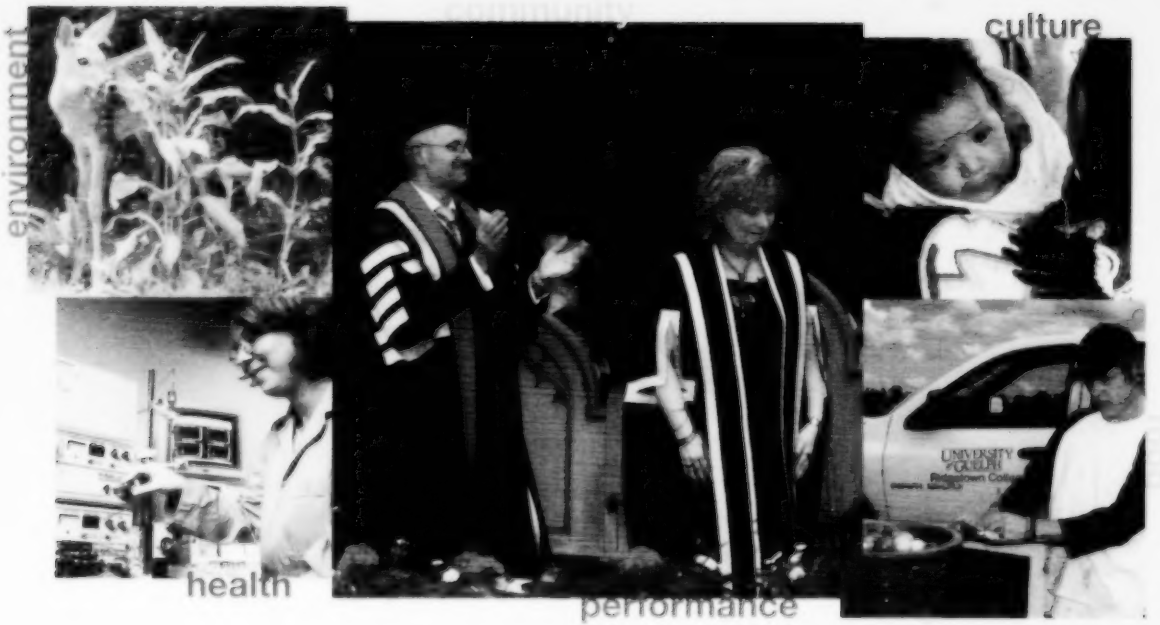
preservation of the environment has carved an impressive niche in multidisciplinary research and teaching.

Guelph researchers and students are at the forefront of extending human knowledge into uncharted fields — biomaterials, robotics, genetic engineering, quantum computing, nanoscience and the cultural, societal and ethical implications they present. We are also enhancing human potential through experiential learning, global studies and civic engagement.

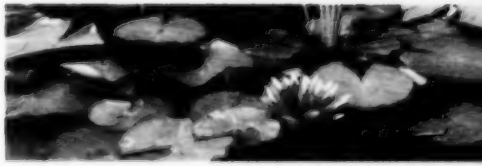
To make these endeavours possible, the University community blends strategic financial planning with academic and physical planning, advocates for appropriate public support and seeks private-sector partnerships to build financial strength.

Through these endeavours, the University of Guelph vision becomes a reality in the development of innovative minds and thoughtful leaders who will define our future.

Alastair Summerlee
President and Vice-Chancellor



Reaching our goals



Promoting accessibility

Total spending on scholarships and bursaries increased 15 per cent in the last year to $21.8 million.

Providing facilities and resources

Thanks to U of G donors and government contributions, the final phase of our $144-million science complex was open for the start of classes in fall 2007.

Building our financial base

The University of Guelph-Humber earned $7.9 million in net revenues, repaying U of G's initial start-up costs. Just over 2,400 students are enrolled.

Engaging in innovation

The world's first centre for high-volume DNA barcoding officially opened on the Guelph campus last summer, headed by Prof. Paul Hebert, Integrative Biology.

Offering top-quality education

Profs. Andrew Peregrine, Pathobiology, and Jack Weiner, Mathematics and Statistics, received Ontario's inaugural Leadership in Faculty Teaching awards.

On the Cover

Students from all over campus migrate to the vibrant atmosphere of the science complex atrium.

U of G will enhance learning

THE UNIVERSITY'S 21st-Century Curriculum Committee has released its final report, recommending ways to enhance the undergraduate learning experience. The committee, made up of students, faculty and staff across campus, has engaged the University community in the evaluation of undergraduate education. Recommendations include creating more opportunities for students to do active research, incorporating more international opportunities into the curriculum, integrating more technology into the classroom and enhancing the first-year experience by combining multiple disciplines in a degree program.

"We strive to offer students the best learning experience possible, and these recommendations will help us build on what's working and adapt to new opportunities," says Prof. Maureen Mancuso, vice-president (academic). *www.21c.uoguelph.ca*

Prof advocates for child care

PROF. DONNA LERO of the Department of Family Relations and Applied Nutrition applauded last spring's provincial announcement of an additional $142.5 million in child-care funding. The funding, which included a three-per-cent wage increase for 33,500 child-care practitioners across Ontario, came partly in response to recommendations from two expert panels on the province's current and future plans for a co-ordinated approach to child care.

Lero, who holds the Jarislowsky Chair in Families and Work, is a lead researcher at the University's Centre for Families, Work and Well-Being. She chaired the expert panel on quality and human resources that recommended increasing educational qualifications for early childhood educators; developing a recruitment and retention strategy with significant wage increases; and establishing policy changes to help centres and regulated home child-care providers improve services.

community m

Collegiality is to a learning community what good citizenship is to a geopolitical community.
At the **University of Guelph**, we demonstrate both.

Helping teachers teach

With support from the Canadian Council on Learning and the Social Sciences and Humanities Research Council, Prof. Mark Lipton, English and Theatre Studies, has created a digital learning commons for teachers of kindergarten to Grade 12.

Launched in November, the portal allows teachers to access and share teaching resources on media education, take part in discussion boards, chat with media experts and access cutting-edge research on media education practices in Canada. "This digital portal will equip teachers with the tools to effectively teach media literacy to students and, in turn, equip students with the tools they need to participate in the ever-growing world of media," says Lipton.

The interactive website is part of a four-year project in which Lipton is interviewing teachers to help build the online tools and study how they are using them. To visit the website, go to mediaeducationproject.ca.

Books for Africa

Ana Perkovic, a third-year environmental sciences student, served as the main co-ordinator for two large initiatives on campus, Best Buddies and Books for Africa. The buddy program connects students with people who have intellectual disabilities. Forty-five Guelph students are matched up with buddies in the community.

The book drive is held during the exam period in the fall and winter semesters. Students donate textbooks published in the last five years, and they are sent away to be used in schools in Africa. Last year, the program collected 1,042 books to send to libraries, schools and literacy programs in Africa, and another 1,538 books were sold online to pay the shipping costs.

"It's a great way for students to make a difference in developing areas where they don't have all the supplies that we have," says Perkovic. "If we all work together, it's amazing the impact we can have."

atters

Volunteering

chancellor

Afghanistan

Chancellor Pamela Wallin visited Canadian troops in Kandahar as part of an advisory panel appointed by the prime minister to consider Canada's future presence in Afghanistan.

Research

Undergraduate students at U of G have a new way to communicate their research: an online open-access publication called *SURG*. Go to www.uoguelph.ca/~surg.

Gold medals

The Gryphon men's and women's cross-country running teams won back-to-back team gold medals at the Canadian Interuniversity Sports (CIS) championships in December 2007. It was

the third CIS victory for the women's team, sixth for the men's team. In March, the track-and-field Gryphons won their first-ever national titles. Coach Dave Scott-Thomas collected four coach-of-the-year medals.

Lab feels like a casino

"Casino operators don't typically allow researchers inside their facilities to conduct research," says Prof. Karen Finlay, Marketing and Consumer Studies. So how does she study the effect that casino design has on a person's gambling behaviour? By building a laboratory with eight slot machines and a 360-degree virtual-reality unit at the University of Guelph.

The gambling research lab is the first to have a panoramic viewer that displays a full 360-degree cylindrical image, giving the effect of standing in an actual casino. The facility is supported by the Ontario Problem Gambling Research Centre.

Finlay, along with Profs. Jane Londerville and Vinay Kanetkar, Marketing and Consumer Studies, and Harvey Marmurek, Psychology, is studying how the use of different lighting, music and images can break the trance-like state gamblers experience when they are in a casino environment for long periods of time.

casino design

Summerlee leads WUSC mission

A distinguished group of Canadian post-secondary leaders — including University of Guelph president Alastair Summerlee — took part in a special university and college mission organized by World University Service of Canada (WUSC) last spring. The mission was hosted by the Botswana Tertiary Education Council, which is looking to increase collaboration with Canada. Botswana is also seeking partners to develop a second university of science and technology.

"This initiative represents an important opportunity for Canadian universities," says Summerlee, who is currently president of WUSC. "Partnerships will evolve out of fields of common interests with our counterparts, opening both doors and minds."

Partnerships may include opportunities in student mobility, internships and exchanges; faculty exchange and research opportunities; joint education programming with WUSC; and joint research opportunities.

Bullying: Psychology professor Karl Hennig is leading a bullying intervention program for 1,500 local students in collaboration with the Wellington Catholic District School Board, police and community mental health agencies. The most effective way to combat violence in schools is to improve children's social development, says Hennig.

World Events

Members of the University and Guelph communities gathered on campus May 21 to remember and support people affected by natural disasters in China, Burma (Myanmar) and the United States.

global

Homelessness

Research by Guelph sociologist Bill O'Grady suggests Canada's penal system promotes homelessness by failing to help inmates prepare for their return to society. Working with Steve Gaetz of York University and John Howard Society of Ontario researchers, O'Grady interviewed more than 100 men. Half didn't receive any type of help in preparing for their discharge, and many ended up on the street.

United Way

President Alastair Summerlee flipped pancakes to help the University community raise $424,000 for the United Way in 2007. This year, he's chair of the county-wide United Way campaign.

Internet geared to English

About 70 per cent of the information published on the World Wide Web is in English. U of G plant agriculture professor Manish Raizada led a global study in partnership with Google that found an overwhelming number of people search the Internet in their native language rather than English, even if they are living in an English-speaking country.

Raizada focused his research on information published by food- and health-related institutions because the Internet is a main source of information. His findings are particularly worrisome when it comes to accessing information on pandemic diseases, outbreaks and famines. "Agencies may be putting information online, but the 700 million non-English-speaking Internet users can't access it," he says.

Since the completion of the study, Google has launched a software program that attempts to translate search queries across 10 major languages.

Politics affects judiciary

Political scientist Troy Riddell examined 978 judicial appointments between 1988 and 2003 and found at least 30 per cent of judges appointed during those years made donations to the political party in power. "That seems high when you consider that less than one per cent of Canadians donate to federal political parties," he says. "Although individuals with political ties can be very fine judges, it does raise concerns."

The study, which was published in the *University of Toronto Law Journal*, raises questions about the legitimacy of the judicial process, says Riddell, who worked with colleagues from Boise State and Brock University.

Patronage appointments were supposed to be addressed by the 1988 creation of screening committees to evaluate applications, but that obviously hasn't happened to a satisfactory degree, says Riddell, who notes the issue is becoming increasingly important as Canadian judges continue to gain more legal authority.

Tractor Tug for Tots **A U of G student initiative raised more than $13,200 for the Children's Foundation of Guelph and Wellington; 40 eight-person teams from the University, the City of Guelph and surrounding areas lined up to pull a 17,000-pound tractor 100 feet to support summer camps, arts and sports activities for local youth.**

Justice

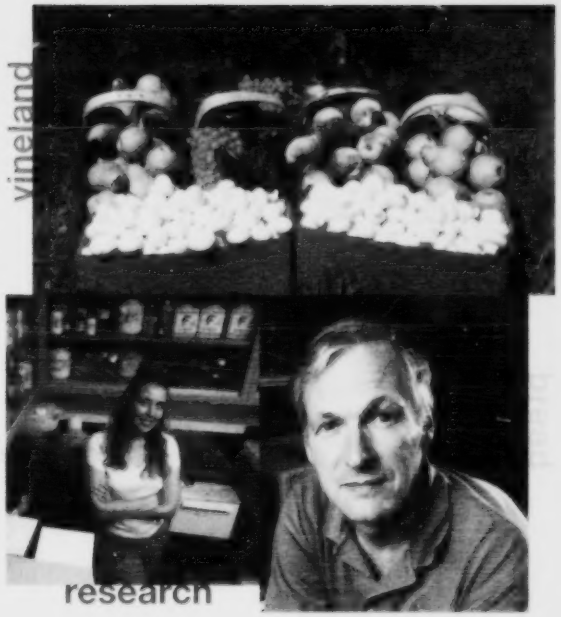
Guelph's Department of Political Science created a new public lecture series in 2007 to focus on justice and public affairs issues. "We're all about taking academic knowledge and using it to make a difference in society," says department chair Byron Sheldrick, who invited lawyer James Lockyer, a champion for the wrongly convicted, to deliver the inaugural lecture Jan. 9.

Sports

Compared with other Canadian universities, Guelph has the largest student participation rate in varsity teams and intramural sports activities.

Trick or Eat

Guelph students set a new national record by collecting more than 36,000 pounds of food items ($70,000 worth) in the annual Meal Exchange "Trick or Eat" event.



Caring for the pigs

PIG MANURE IS A SIGNIFICANT part of Tania Archbold's job as she helps Prof. Ming Fan and graduate students in the Department of Animal and Poultry Science with their research projects.

When a group of pigs is being studied, she may be responsible for feeding, cleaning, collecting samples of blood or manure, processing those samples and collecting the data. Each study, of course, requires a different procedure.

She also trains graduate students in the use of the lab equipment and procedures. "Sometimes we'll have as many as six people working in here, fighting for bench space. The research we've been working on has given us clearer insight into how the body digests food at a molecular level. This could one day lead to better treatments for disease in both animals and humans."

Break bread at breakfast

THE TYPE OF BREAD YOU EAT for breakfast can affect how your body responds to lunch, says Prof. Terry Graham, Human Health and Nutritional Sciences. He studied four breads to determine which have the most positive health effects on carbohydrate metabolism, blood sugar and insulin levels.

Using white, whole wheat, whole wheat with barley and sourdough white breads, Graham and a team of researchers examined how subjects responded just hours after eating the bread for breakfast and again after eating a standard lunch. The subjects, who were overweight and between 50 and 60 years of age, showed the most positive body responses — lower blood sugar levels — after eating sourdough bread.

Those positive responses remained even after eating a second meal that didn't include the bread.

Graham says the fermentation of the sourdough changes the starches, creating a more beneficial bread.

food matters

The University of Guelph knows food — food production; food safety; food security; and the impact of food on cultures, economies and the environment.

Vineland gets wide support

"This is a tremendous step forward for creating a centre of excellence and innovation that will bring benefits not only to the Niagara region but throughout Ontario and Canada," said Donald Ziraldo, co-founder of Inniskillin Wines and chair of the Vineland Research and Innovation Centre board. He was responding to the 2007 announcement of $12.5 million from the province and $15.5 million from the federal government to support the centre's development plan. Several industry associations have also committed funding to the project.

In February 2008, the Vineland centre established a stakeholder advisory committee that includes U of G president Alastair Summerlee and environmental biology professor Mike Dixon. "Vineland's success will be driven by brilliant science working hand in hand with market delivery," said Ziraldo, a 1971 Guelph graduate.

local food system

It's time to go local

"It's not easy for consumers to access local food unless they go to a farmers' market," says Prof. Karen Landman, Environmental Design and Rural Development. She's part of a Guelph research team investigating ways to establish a local food system.

This project could ultimately lead to shoppers having the convenience of going to any local grocery chain and buying from a section solely dedicated to food produced in the near landscape. Grocery stores have organic, vegetarian and vegan sections, so why not a locally grown section, she asks.

Consumer demand for local food is booming, and there's an opportunity for local farmers to add value to their products, but processing and distribution systems are weak, says Landman. Her team is conducting workshops with consumers and producers in Wellington County and the City of Guelph, and will prepare a report with recommendations for the Ontario Ministry of Agriculture, Food and Rural Affairs.

Tomatosphere

Organic food

The University's new Centre for Organic Dairy Research at Campus d'Alfred brings together resources and expertise to provide research into the science of organic dairy production.

Additionally, it connects researchers with organic research stations across North America and Europe and benefits from research plots for organic crops established by the Department of Plant Agriculture near Guelph.

Alfred

Agriculture

The first Canadian university to offer a major in organic agriculture, Guelph gives its students a background in production, processing, environmental health and sustainability.

Trees

Environmental biology professor Andy Gordon says planting harvestable trees in Ghana could provide food, income security and a way to stop the depletion of resources.

Chickens

The egg came first, but now animal and poultry science professor Steve Leeson is developing feed rations for chickens to enrich poultry meat with heart-healthy omega-3 fatty acids.

Goodbye to brown potato chips

"Not many people like brown chips because they don't look as appetizing and they taste bitter," says food scientist Rickey Yada, who heads a national scientific network in advanced foods and materials. The cold temperatures needed for long-term storage of potatoes cause the starch in spuds to break down into smaller sugar molecules. It's the reaction between these sugars and the extreme heat of deep frying that causes browning. "The longer you refrigerate potatoes, the more starch converts to sugar," he says.

Working with a team in Guelph's departments of Food Science and Plant Agriculture, Yada found an enzyme in a variety of potato grown in North Dakota that allows the potato to be stored at colder temperatures without turning brown. Introducing the gene into Ontario potato varieties would be a big plus for avid chip eaters and for the $26.8-million chip industry in the province.

potato chips

U of G offers first-rate fare

For four years running, food services on the Guelph campus have been ranked first among Canadian universities in the University Report Card. The online survey is based on the opinions of more than 43,000 undergraduate students across Canada and is published each fall in the *Globe and Mail*.

Hospitality Services operates 16 different dining facilities on campus and features Canadian and international cuisine. Kosher, halal, vegetarian and vegan entrees are also available, and the Student Nutrition Awareness Program encourages healthy eating habits.

The University is also implementing a local sustainability plan that promotes fair trade coffee, reusable mugs and dishes and locally grown food. There have been no disposable dishes in residence dining halls for 15 years, and most other food outlets eschew Styrofoam in favour of biodegradable drinking cups made from corn.

Land resource science professor Stewart Hilts says Ontario's multi-ethnicity is not reflected in what's being grown in the province partly because immigrant farmers can't afford to farm here. Recently, the Friends of the Greenbelt Foundation awarded $400,000 to help establish a training farm where immigrant farmers can gain experience farming in Ontario.

Guidance

A 2006 graduate of Guelph's School of Hospitality and Tourism Management, Matthew Duffy lauds instructor Simon Day for his sound advice and guidance. He says Day taught him a lot about the food-service industry and pushed him to get his feet wet by beginning an apprenticeship while still an undergraduate.

chef

Duffy just completed his second year at the prestigious Stratford Chef School, where he has been both a culinary student and a television star. He and 11 of his classmates appeared in *Chef School*, a 13-episode reality show that premiered Jan. 1 on Canada's Food Network.

Pollination

With one of every three mouthfuls of food relying on pollination by bees, everyone should be concerned about recent losses in Ontario's bee colonies. Environmental biology profes-

Innovation is golden

CEREAL PROCESSING AND baked goods are a multi-billion-dollar sector of the Ontario agri-food industry that will be at the core of emerging innovation and a growing economic cluster in cereals science. The University and the Ontario Cereals Industry Research Council (OCIRC) have launched an Industry Research Chair in Cereal Technology designed to expand uses for Ontario-grown wheat.

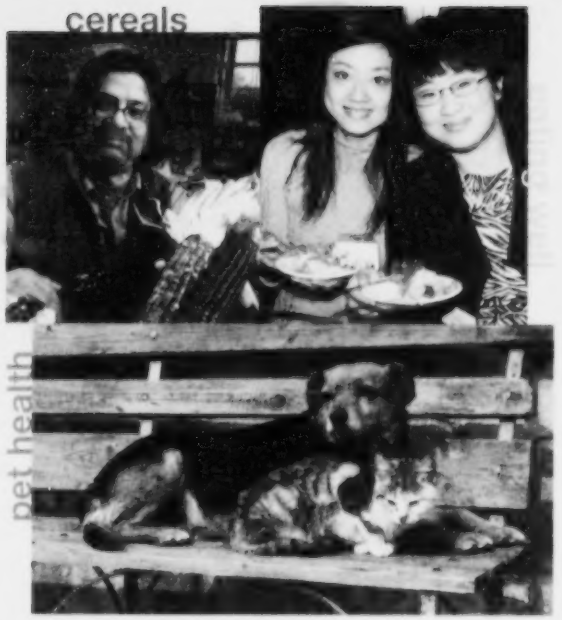
Prof. Koushik Seetharaman will lead the development of a research program, liaise with cereal companies and government agencies, and work with industry to develop a centre of excellence for cereals research. Funding for the endowed chair was provided by the OCIRC, the federally funded Agricultural Adaptation Council and U of G. The Ontario Ministry of Agriculture, Food and Rural Affairs will help people working in industry access the skills development courses and internships offered through the research chair.

U of G experts cracked the case

IT WAS BAD NEWS WHEN tainted pet food sickened animals and sparked a recall of products across North America last spring. The deaths of pets in the United States led Mississauga-based Menu Foods to issue a recall on millions of packages of cat and dog food.

The good news came when experts in the Animal Health Laboratory (AHL) and Analytical Services found the cause. They discovered melamine in pet foods and in urine and tissue from cats that had died of unexplained kidney failure. Melamine is a chemical used in fertilizers and plastics.

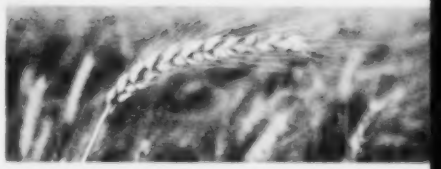
AHL director Grant Maxie says the case emphasized Guelph's strength in identifying food contaminants. He credits the American Association of Veterinary Laboratory Diagnosticians for helping to share test results with vets in Canada and the United States.



cereals

pet health

BSE test **Guelph engineers Gordon Hayward and Warren Stiver have developed a technology that allows BSE and other prion diseases to be detected more easily. The sensor can test brain samples from suspected BSE animals in about two hours and pinpoint affected animals so that entire herds don't need to be eliminated.**

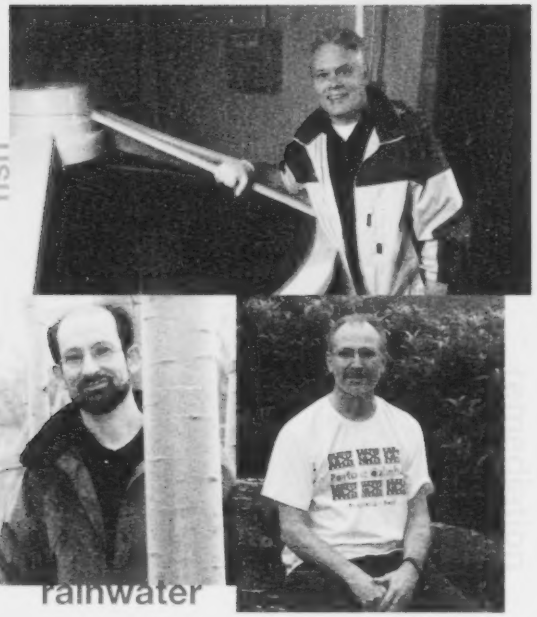


sor Ernesto Guzman believes two specific parasites — varroa mite and *Nosema ceranae* — are causing the high winter mortality rates. This spring, he's evaluating the success of preventive measures used by beekeepers last fall.

new plant varieties

Valued plants

The farm-gate value of plants developed from research at the University of Guelph is estimated at more than $80 million per year. Some 600 varieties and lines of plants have been produced by Guelph researchers and made available to the agri-food sector in the University's 115-year history, along with more than 2,300 experimental lines used to test various traits.



Homeowners can harvest rainwater

A TEAM OF RESEARCHERS with U of G's School of Engineering has designed and piloted a household system that collects rainwater from the roof and pumps it into the home to be used to flush toilets, run the dishwasher or water the garden.

The innovative approach has captured the interest of municipalities and developers across Canada as a possible solution to the mounting fears about water shortfalls, says Prof. Khosrow Farahbakhsh, who is leading the research. He says designing a system that can be easily incorporated into new homes is part of a nationally funded project aimed at making rainwater harvesting a "mainstream" practice in Canada. "In most applications, one could meet over 50 per cent of household water demands with rainwater harvesting," he says.

Fish have distinct personalities

FISH HAVE A DISTINCT personality, which explains differences in behaviours like eating and swimming, according to new research by Guelph biology professor Rob McLaughlin and researcher Alex Wilson. They found that fish show extremes for personality traits: staying put or exploring, risk-averse or risk-taking, sociable or aggressive.

"We've seen the kinds of phenomena we associate with personality in humans showing up in domesticated animals and now in wild animals," says McLaughlin.

He and Wilson observed two kinds of feeding strategies among brook trout in the Credit River near Toronto: active feeders that swam near the surface and sit-and-wait feeders that remained near the stream bottom, eating what passed by. Those personality traits persisted when the fish were caught and tested in the Hagen Aqualab on campus. McLaughlin says their work could help in managing fish stocks more precisely.

environment

University of Guelph expertise includes a deep understanding of what makes up life on Earth, from atoms, cells and seeds to whole ecosystems.

Kinross mines U of G expertise

University of Guelph researchers will co-ordinate a new education and research network between Canada and Brazil to develop environmental initiatives focused on the use and remediation of land and water. Kinross Gold Corporation, which operates a mine in central-west Brazil, is providing $1 million in funding and in-kind logistical support to help establish the project.

The Kinross Canada-Brazil Network will focus on resource extraction industries to help them minimize environmental impacts and rehabilitate disturbed lands. U of G will also collaborate with institutions throughout the South American nation on student and faculty exchanges and joint courses and research projects.

Richard Heck, a Guelph land resource science professor who helped create and will oversee the network, says students will gain valuable teaching and learning experiences.

climate change

Grads speak out in Bali

Those who are inheriting the Earth's environmental problems are speaking out as members of an international youth movement. Seven U of G graduates and a current student participated in the Canadian Youth Delegation (CYD) at the UN Climate Change Conference in Bali, Indonesia, in December.

Alumnus David Noble, who works as an environmental consultant, served as a youth mentor; current student Aiden Abram was delegation co-ordinator. They were joined by 2007 graduates Jennie McDowell, Adam Scott, Derek Pieper and Trevor Bennett, all of Guelph. Genevieve Gilbert of Ottawa and Melanie Mullen of Niagara Falls, Ont., also attended.

The CYD was established in 2006 to educate young people and promote action on climate change issues. In total, 30 young Canadians attended the Bali conference along with scientists, climatologists and 130 environment ministers from around the world.

matters

Zerofootprint The University of Guelph has an online calculator that [illegible] to measure and reduce the environmental impact of their daily activities. [illegible]

Water

Geography professor Rob de Loë has been chosen to chair a North American advisory panel aimed at finding solutions for freshwater preservation, conservation and access.

Carbon credits

The Centre for International Programs has launched a program whereby students studying abroad can purchase carbon offsets equal to the emissions their flight will generate.

Humboldt

Prof. John Kironomos has received a Humboldt Research Award, one of the top international prizes for achievement in science. He studies the relationship between plants and fungi.

Transit pass

In an effort to reduce the number of cars in the city, Guelph Transit now offers U of G employees a discount on its monthly bus pass. Students already use discounted bus passes. In addition, U of G welcomed expanded GO Transit bus service between campus and the greater Toronto area. Up to 450 riders per day leave their cars at home or park and ride from a new commuter parking lot in Aberfoyle.

This won't be easy

"If I don't understand it, I like it that much more," says Paul Finlay, a two-time U of G graduate in physics who is just beginning a doctorate in particle physics. He's one of the regulars clocking in at TRIUMF, Canada's national laboratory for nuclear and particle physics at the University of British Columbia.

Run by a consortium of universities — U of G is an associate member — TRIUMF is a subatomic research facility where, Finlay says, data are the most important thing. "We're doing fundamental research. It's not going to be easy learning how the universe works. No matter how much better we get at probing, there's always a new challenge."

Finlay's research is supported by the University's prestigious Brock Scholarship — worth up to $30,000 a year for four years. The scholarship is funded from a $1-million endowment donated by 1958 graduate Bill Brock and his wife, Anne.

how the universe works

Researchers look to biofuels

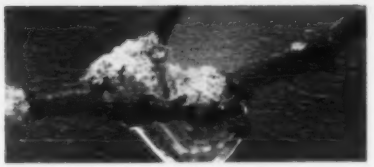
Three leading scientists at U of G are looking beyond the corn kernel to learn how to turn corn husks, stalks and leaves as well as straw, switchgrass and even wood chips into usable biofuels.

"Making ethanol from plant cellulose would offer an alternative to using food crops to produce energy," says Prof. Anthony Clarke, Molecular and Cellular Biology, who is working on the project with physicist John Dutcher and chemist Jacek Lipkowski.

Plant fibres are harder to break down than corn kernels, but there are natural enzymes that can degrade the plant structure. Cows, for example, can digest plant fodder because their guts contain specially evolved microbes able to gnaw through cellulose.

The researchers hope to copy this natural breakdown by combining a range of expertise and tools from genetically engineered microbial enzymes to nanoscale microscopy and imaging.

Green degree **Students who want to tackle environmental issues now have the option of studying the social sciences as a way of addressing some of the planet's most persistent problems. Guelph is introducing a BA degree in environmental governance, offered jointly by the departments of Geography and Political Science.**



Wet hair

Drying their hair au natural was one tactic used by Guelph students during a university residence energy-reduction challenge posed by the Sierra Youth Coalition.

Groundwater

Tina Sha, a master's student in engineering, has received $40,000 from the Consulting Engineers of Ontario to study how climate change may affect Ontario's water resources.

DNA Barcoding

The International Barcode of Life (iBOL) Project headquartered at U of G's Biodiversity Institute of Ontario continues to draw interest worldwide. China recently pledged more than $25 million and will serve as a central node in the project, which will enlist 25 countries to help create the world's first reference library of DNA barcodes for use in species identification around the globe.

barcodes

Prof. Paul Hebert, Integrative Biology, was the first scientist to propose that a short DNA sequence from a standard gene region shared by all multicellular life could be used to identify species.

Scientists find water on Mars

Physicists at the University of Guelph have detected the first "on-the-spot" evidence of significant amounts of water still existing on Mars. Rather than sitting in pools, the water is trapped in subsurface soil on the red planet, most likely the remnants of oceans or pools that evaporated.

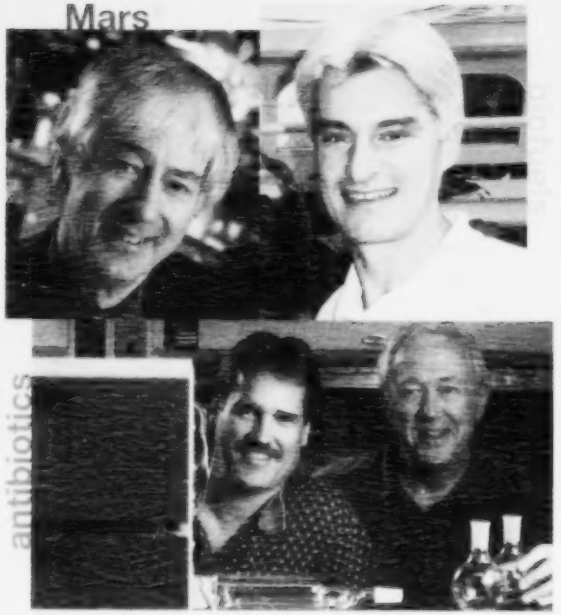
"Our work is the first in situ evidence for total bound water in the Martian subsurface," says lead researcher Iain Campbell, a University professor emeritus who has been working on the project with Profs. Ralf Gellert and Joanne O'Meara.

The discovery was made courtesy of the Mars *Spirit* rover, a robotic device that has been exploring the red planet since early 2004. An X-ray spectrometer called an APXS on the rover's arm captured the data about the trapped water. "Other instruments suggest the possibility — the APXS lets us determine the actual amount," says Campbell.

Antibiotics pose little risk

After a six-year study examining the use of pharmaceuticals in the Canadian hog and cattle industries, Profs. Paul Sibley, Environmental Biology, and Keith Solomon, Centre for Toxicology, conclude that antibiotics used on livestock pose minimal environmental risk in Canada.

Pharmaceuticals first raised concerns more than a decade ago. It was thought they could cause contamination through routine practices such as manure spreading. To determine whether these concerns were valid, Sibley, Solomon and a team of researchers applied pharmaceuticals directly to soil and water to simulate a worst-case scenario, then measured the level of toxicity. They also measured concentrations of antibiotics at several locations heavily populated with livestock. In both studies, they found the level of antibiotics detected was "significantly" lower than the amount required to elicit toxic responses.



Energy initiative **The Ontario Power Authority's Conservation Bureau and Oikos International, a student organization, have both applauded a Guelph initiative in which undergraduate and graduate students have committed more than $4.3 million over 12 years to energy conservation projects on campus.**

In February, the Ontario government announced a $5.2-million investment in iBOL, and the Alfred P. Sloan Foundation recently gave a $1-million grant to pay for DNA barcoding of up to 85,000 marine specimens.

Biological philosopher

Philosophy professor Stefan Linquist says many interesting questions in biology relate to philosophy, especially around adaptation and evolution. His research

includes looking at evolutionary approaches to understanding human emotions, especially the more complex or moral ones such as jealousy, guilt and shame, which seem to be influenced by both evolution and culture.

Bugs

When Profs. Steve Marshall and Gard Otis, Environmental Biology, led an entymology field trip to the Amazon rainforest, they were amazed by their students' "bug-of-the-day" finds. "They saw insect behaviours that nobody had filmed before," says Marshall. "It was phenomenal." The field trip helps students sharpen their observational skills and learn to identify insects and arthropods.

BOD POD opens at U of G

The first of its kind in Ontario, Guelph's new Body Composition and Metabolism Laboratory is dedicated to studying the effects of exercise, diet and medication on body composition and metabolism. It's equipped with cutting-edge technology, including one of the few "BOD PODs" in the country.

Instead of the typical method of submerging the entire body underwater to determine a person's fat and lean mass, the BOD POD measures body composition through air displacement. It's more user-friendly for both the researcher and subject, says Prof. Andrea Buchholz, lab director and faculty member in the Department of Family Relations and Applied Nutrition.

Funded by the Canada Foundation for Innovation, the lab will be instrumental in helping researchers find solutions to the obesity epidemic and ways of maintaining muscle mass and bone density as we age.

Students design dental clinic

Guelph engineering students have designed two mobile dental clinics for use in the Dominican Republic. Prof. John Runciman asked his fourth-year biomechanical design class for a plan to turn two donated cube vans into dentist's offices that can travel to remote communities where dental health services are non-existent.

Without public dental health care or education, about 95 per cent of the population in the Dominican Republic suffers from periodontal disease and about nine out of 10 people have cavities requiring fillings, says Alex Vistorino, executive director of the Smiles Foundation in Santo Domingo, where the new clinics-on-wheels will be mobilized.

The students had to determine space allocation; design a waste-disposal system; accommodate necessary dental equipment; and find ways to provide air conditioning, electricity, lighting, water and compressed air.

health matter

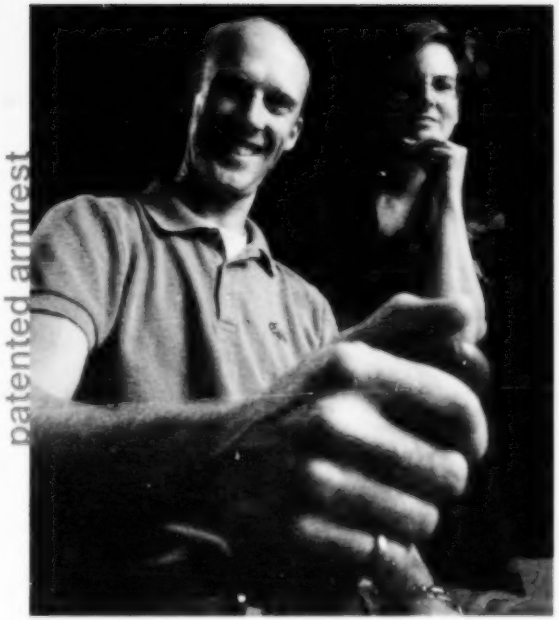
The University of Guelph stands at the interface between the human and animal worlds, able to apply knowledge gained from both realms to improve health and wellness.

Ovarian cancer under attack

BIOMEDICAL SCIENCE PROFESSOR Jim Petrik and his colleagues have discovered a protein expressed by ovarian cancer cells that may act as an identifying marker at the onset of the disease. "Finding a marker that can help in detecting ovarian cancer in the early stages is probably the most important component of beating this disease," says Petrik, who worked on the project with Prof. Roger Moorehead and PhD student Jim Greenaway.

Ovarian cancer afflicts some 2,300 Canadian women annually. Because the symptoms can be attributed to a number of ailments, it often goes undetected until it's well advanced and the odds of survival are poor, says Petrik.

The protein identified in his Guelph lab is expressed almost immediately after the cancer cells interact with the ovary, offering the potential to develop a reliable early screening test that could be as simple as a blood test.



patented armrest

Armrest can prevent injuries

GUELPH ENGINEERS HAVE designed an armrest that reduces repetitive strain injuries and has the potential to be used in almost anything with a seat, from heavy machinery to powered wheelchairs. Tests show the armrest reduces muscle activity in the neck by more than 60 per cent compared with typical armrests, says Prof. Michele Oliver, who has led the project and will help move the design into the commercial market.

Using computer simulations, Oliver and graduate student Greg Northey found that a joystick operator's limbs can go through 20,000 motions in a typical 10-hour workday and stationary armrests don't allow the neck muscles to rest. Graduate student Taylor Murphy used the data to design a moveable armrest that mimics the natural motion of the arm. The armrest moves with the arm vertically and horizontally, relieving the shoulder from constantly stabilizing the arm and preventing strain on the neck muscles.

S

Research In 2007, the University of Guelph received $14,000 per faculty from national science and medical research granting agencies, more than at any other Canadian university without a medical school.

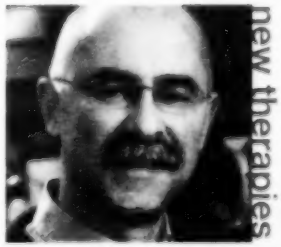
Pain

Pain and stress are known to reduce an animal's ability to heal, says Prof. Patricia Turner of the Department of Pathobiology. That's why she and her research team are studying how social networks and positive attention can reduce anxiety and alter an animal's perception of pain. Turner says kindness may provide another means to improve comfort for animals undergoing painful procedures.

comfort

Royal Society

Prof. Chris Whitfield, chair of the Department of Molecular and Cellular Biology, was elected a Fellow of the Royal Society of Canada. One of the University's first Canada Research Chairs, Whitfield focuses on the nature and assembly of bacterial surfaces. He studies the functions of bacteria to ultimately identify new targets for therapies against bacterial infections.



new therapies

Future doctor wins Rhodes

Kate Smolina, a fourth-year biomedical sciences student at U of G, has won a prestigious Rhodes Scholarship to pursue graduate studies in public health policy at the University of Oxford. Students from about 20 countries compete annually for 90 Rhodes Scholarships, which are worth about $35,000 per year and cover tuition, fees and a living allowance.

"This is literally a dream come true," says Smolina, who attributes her drive for excellence to the hard work of her Russian-born parents, who came to Canada nine years ago so she and her sister could have a better life.

Smolina is working this summer as a policy intern at Queen's Park with the economics, environmental and resources policy branch. Her long-term career goal is to work for the World Health Organization and bridge the fields of medicine, epidemiology and public health to control infectious diseases in the developing world — an interest sparked by student volunteer work in India and Costa Rica.

Rhodes Scholar

Good bugs, bad bugs

Right now you have more bacteria living in your gut than there are people living on the planet. Those bacteria or "bugs" are the research focus of Prof. Emma Allen-Vercoe, Molecular and Cellular Biology. "Our gut microflora are key to our overall health, yet little is known of the ecology and physiology of these organisms and their interactions with host cells," she says.

All humans have unique microflora made up of up to 1,000 different bacterial species that remain with them throughout their entire life. Allen-Vercoe is studying how microflora in the gut contribute to inflammatory bowel disease, an umbrella term for ulcerative colitis and Crohn's disease. Research of this kind has been difficult to do in the past because most of the bacteria that live in the gut grow only in conditions without oxygen. Allen-Vercoe's lab in the science complex is one of the few places in Canada designed to study these bacterial species.

Life A new U of G course called "Life: Health and Well-Being" helps first-year students manage the transition to university life. Topics such as psychological health, nutrition, fitness, alcohol and substance abuse have a practical application in the students' lives and a connection to issues they may be studying or struggling with.

Tobacco

Prof. Tim Dewhirst, Marketing and Consumer Studies, examines marketing strategies used by the tobacco industry. The most common age people start smoking in Canada is 13 or 14, he says. "Market research indicates that this age group understands smoking is bad for them, but they underestimate the power of the addiction. They don't fully comprehend what they're getting into."

marketing

Trauma

In a study involving 99 teenaged mothers, psychology professor Heidi Bailey and a team of researchers found that women who had endured some form of childhood trauma and had yet to deal with it also frequently struggled to develop an emotionally supportive relationship with their babies. This leaves their children without a sense of security and can lead to behavioural problems.

Deafness

Just one per cent of students who are deaf or hard of hearing go on to university or college, and those that do often drop out after the first year. U of G economist Douglas Auld

Veterinarians focus on cancer

A NEW INSTITUTE for Comparative Cancer Investigation at the Ontario Veterinary College (OVC) will be dedicated to providing comprehensive cancer care for companion animals and unlocking the secrets of the disease for the benefit of all species, including humans.

OVC dean Elizabeth Stone says veterinary medicine has become an effective testing ground for new cancer therapies because it allows researchers to study naturally occurring cancer in dogs and cats and conduct clinical trials that parallel human research. "We are taking an integrative approach to cancer studies that cannot be matched in a human health-care environment," she says. "Guelph investigators will be studying all aspects of the disease, including abnormal cells and tissues at the molecular level, applied clinical care, cancer nutrition and prevention, environmental factors and societal impacts."

Prof conducts research on ice

PROF. LAWRENCE SPRIET, Human Health and Nutritional Sciences, became something of a hockey star when a number of national media came to the Sleeman Centre in downtown Guelph to catch his field study in action. He was testing how dehydration affects the performance of elite hockey players.

Using the OHL Guelph Storm team, Spriet measured the on-ice performance of players when they're properly hydrated compared with when they're dehydrated. He and PhD student Matt Palmer found that, on average, players voluntarily replaced only 60 per cent of their sweat loss. "But what was more alarming was that about one-third of the players lost between one and two per cent of their body mass in sweat during practice," says Spriet. "At that level of dehydration, you are probably hurting your on-ice performance." Sweating excessively impairs the body's ability to meet the blood-flow needs of contracting muscles and leads to feelings of fatigue.

Fitness degree More than 430 students applied for just 60 spots in a new degree program developed by the University of Guelph and Humber College for students interested in being fitness instructors and nutrition specialists. There is a growing demand for professionals to know more about preventing obesity-related diseases.

suggests the province create a transitional institution where deaf students could spend a year taking post-secondary courses and living in residence before attending university or college.

Cell therapy

Researchers at the Ontario Veterinary College are offering stem cell therapy to repair injured tendons and ligaments in horses in hopes that a similar treatment may prove viable for human patients. Clinical cases handled by orthopedic surgeon Antonio Cruz will benefit from laboratory research being conducted by Prof. Dean Betts and PhD candidate Thomas Koch, Biomedical Sciences.

Wellness

U of G's Wellness Advisory Committee promotes healthy and productive lifestyles for employees, such as joining other Canadians in last October's "In Motion" one-kilometre walk.

Kidney disease

Prof. Nina Jones, Molecular and Cellular Biology, has received an Ontario Early Researcher Award to study the structure and function of the kidney's blood filtration unit.

History documented on film

Prof. Arthur Renwick's series of photographs titled "Delegates: Chiefs of the Earth and Sky" has taken him from South Dakota to Brazil.

"I came across an old textbook that included a series of historical photos taken between 1850 and 1890," he says. Many of the portraits show native chiefs such as Red Cloud, Sitting Bull and Crazy Horse — all taken while the chiefs were in Washington, D.C., to discuss a treaty with the U.S. government.

With camera in hand, Renwick headed to South Dakota to document the landscape where many of the historical events had played out and eventually produced a photo series with each photo named for one of the warriors. "Delegates" has been exhibited across Canada and travelled to Brazil last fall.

Happy birthday, Anne

Lucy Maud Montgomery's classic *Anne of Green Gables* was first published in 1908. To celebrate the book's 100th anniversary, the University of Guelph is hosting an international conference in October to showcase Montgomery's publishing career and her influence on literature and culture. Canada's foremost Montgomery scholars and biographers, including Guelph professors Mary Rubio and Elizabeth Waterston, will discuss the author's worldwide legacy.

The conference will draw on the University's extensive collection of Montgomery memorabilia — her private journals, scrapbooks, handiwork, photographs, first editions and other material — and the L.M. Montgomery Research Centre website, a scholarly resource designed to make the collection easily accessible. The dynamic website — www.lmmrc.ca — also reflects the growing body of scholarship being published on Montgomery.

culture matte

At the **University of Guelph**, we recognize that our true culture lies beneath sensory manifestations and begins with deeply held beliefs that determine how we think, feel and act.

Improvise and negotiate

IMPROVISATION IS ARGUABLY the most widespread musical practice in the world and the least understood, says Prof. Ajay Heble of the School of English and Theatre Studies. He will explore the creative process of improvisation while leading an international research initiative that involves 18 universities. "Improvisation, Community and Social Practice" is funded in part by a $2.5-million grant from the Social Sciences and Humanities Research Council.

Music plays a tremendously important role in society, says Heble, who is also the founder and artistic director of the Guelph Jazz Festival. "By modelling forms of social organization, it can literally help us hear the sound of change." As part of the project, researchers will investigate how post-1960s musical improvisation opens up consideration of such vital issues as human rights, alternative community formation and transcultural understanding.

great artists

Fine art, great artists

THE UNIVERSITY OF GUELPH is home to one of the most vibrant arts communities in Canada, with visual artists and professors who might be defined as national treasures. Among them is Suzy Lake, one of the foremost feminist photographers of our time. She has produced a body of work that ranges from photojournalism covering the Contra war in Nicaragua to painterly images that explore consumer and pop culture attitudes.

Robert Enright is editor-at-large of *Border Crossings* magazine and a renowned cultural journalist who teaches Guelph graduate students the rigours of critical writing.

U of G is also home to the FASTWÜRMS duo of Dai Skuse and Kim Kozzi. It would be hard to come up with a medium they haven't mastered. Sound, video, images and performance are all part of their classes and research in a high-tech digital media studio at U of G.

rs

Digitizing the Scots

Fairy tales

The humour and double entendre communicated through the fairy-tale characters in *Shrek the Third* may seem innovative, but Prof. Jennifer Schacker, English and Theatre Studies, says it's nothing new. "Self-parody has a 500-year history," says Schacker, who is studying British pantomime, a traditional form of theatre that often has a fairy tale at its core and varying degrees of social commentary.

self-parody

Healing

The effects of conflict still linger 15 years after a brutal civil war ended in El Salvador. Prof. Larry Harder, Environmental Design and Rural Development, hopes a garden and arts centre designed by Guelph landscape architecture students will help heal war wounds in the town of Suchitoto. The project exposed students to the ethical and moral aspects of design work, and they learned about geography, history, culture and art.

garden

Playwright's words have impact

JUDITH THOMPSON, theatre studies professor and acclaimed playwright, is the first Canadian to win the annual Susan Smith Blackburn Prize for her political play *Palace of the End*. The $20,000 prize is based in Houston, Tex., and is named for the late Susan Smith Blackburn, an American actress and author who believed that society needs more influence from talented women.

Palace of the End consists of three storylines that capture the global effects of the Iraq War. It debuted at the Edinburgh Festival and has been produced in Toronto and Florence, Italy. Thompson also won the prestigious 2007 Walter Carsen Prize from the Canada Council for the Arts. The $50,000 award honours the highest level of artistic excellence and distinguished career achievement by Canadian artists.

A two-time Governor General's Literary Award winner, she is an officer of the Order of Canada and has been nominated twice for a Genie Award.

impact

It's a question of ethics

PHILOSOPHY PROFESSOR John Hacker-Wright knows what it takes to be a good person. In fact, he has it down to a theoretical science. Courage, temperance, justice and honesty are the traditional human virtues defined by the great philosophers such as Aristotle, he says. These are the traits deemed to be the basic ingredients of an ethical person.

But over the last three decades, philosophers have been pushing to add the characteristic of caring, and Hacker-Wright is a strong supporter of this movement. "The labour that goes into a mother raising a child is not recognized," he says. "But this caring is essential to creating an environment where people can develop into good human beings."

The original list is based on a "male-dominated" philosophy created at a time when success in war was highly valued and the ability to nurture and care for another human being was not even recognized, he says.

Entrepreneur **Guelph student Brittany Anderson found a way to show her art and gain hands-on business experience. With funding from a provincial initiative that supports young entrepreneurs, she opened the summer-time hoot! gallery in downtown Guelph to feature the work of Guelph undergraduates and local artists.**

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Classic

Teaching

Brazilian-born French professor Eliane Lousada speaks five languages and says her experience using those skills has given her a desire to better understand the teaching process. "We tend to focus on the content, but the real work of a teacher goes beyond knowing the factual material to be taught." Her research highlights work done by teachers outside the classroom.

Digital library

The Ontario Library Association honoured chief information officer Mike Ridley for his work on Knowledge Ontario, a digital library that gives Ontarians equal access to online electronic sources.

History book

Prof. Matthew Hayday's *Bilingual Today, United Tomorrow* examines Canada's language policy. It was a finalist in a recent competition for books in the Social Sciences.

bilingualism

Natural history museums hold environmental secrets

U OF G BIOLOGIST Ryan Norris has visited museums all over the world to test a hypothesis about what led to population decline in marbled murrelets. The birds spend more than 90 per cent of their time on the sea, but they travel inland to nest in old-growth forests.

Scientists previously attributed their decline to a loss of coastal forests, but Norris decided to examine how marine diet might have influenced the birds' populations by analyzing carbon and nitrogen isotopes that become fixed into their feathers when they're grown.

Working with Peter Arcese of the University of British Columbia, he collected feathers from museum specimens of marbled murrelets going back more than a century. Their analysis showed a gradual change in diet from fish to marine invertebrates, which provide less energy than fish. Norris says it was probably diet, not loss of habitat, that caused the population decline.

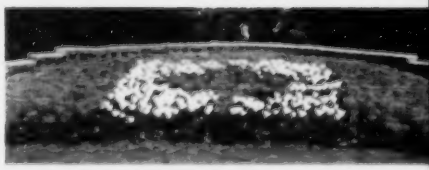
Canadian art is different

ENGLISH-BORN ARTIST Martin Pearce says he'd always admired North American painting but didn't really understand it. "When I came here, I got it. The light is different in Canada — flatter and harder. We literally perceive the world differently."

He's put that new perception to work in Guelph's School of Fine Art and Music, painting landscapes that feature strong artificial colours. "I want to show how landscapes can be remarkably beautiful yet dangerous at the same time — that pollution sometimes brings in these bright artificial colours that are actually attractive but at the same time hazardous."

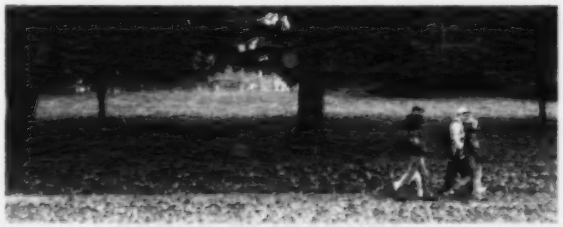
Perception also plays a role in his teaching. "Students are used to instant images. But in the art studio, there they are with a pencil in their hand and a model sitting 12 feet away. They have to create the image of the model on the paper, and it's a slow process. As they work, their whole perception of the world is changed."

Tourism **Prof. Marion Joppe, School of Hospitality and Tourism Management, holds a new University Research Chair focused on issues related to the tourism and hospitality industry: the looming labour shortage, the environmental impact of travel and the repositioning of Canada in light of changing consumer attitudes.**



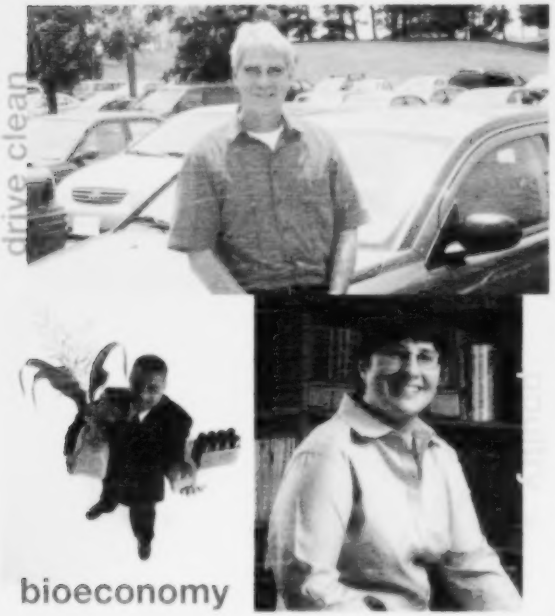
Vacation

U of G was the first university in English-speaking Canada to help employees spend their vacation working in the developing world. Four Guelph staff participated in Leave for Change in 2007, and six will volunteer this summer in Vietnam, Malawi, Botswana and Guatemala, sharing skills that range from tourism management to computing and web design and teaching English as a second language.



Walkable town

How to make the southern Ontario community of Minto more "walkable" was the subject of a project course involving 50 U of G landscape architecture students. Their "walkability" plans yielded high marks in Minto's constituent communities of Palmerston, Harriston, Clifford and Drew, which hope an improved trail system will strengthen connectedness and a sense of identity.



Poultry industry seeks expertise

THE POULTRY INDUSTRY Council of Canada is sponsoring a new faculty position in the Department of Population Medicine to help strengthen poultry research and teaching programs at U of G. The industry is worth about $9.5 billion a year in Canada, with 40 per cent of that based in Ontario.

Prof. Michele Guerin, a former practising veterinarian, supports the industry by focusing on poultry health and welfare, production and management, economic and environmental issues, and food quality and safety. She works closely with poultry specialists from the Ontario Ministry of Agriculture, Food and Rural Affairs as well as U of G professors Shayan Sharif, Pathobiology, and Grégoy Bédécarrats, Animal and Poultry Science. Guerin also belongs to the Centre for Public Health and Zoonoses. Based at the Ontario Veterinary College, the centre co-ordinates research on animal diseases that affect public health.

Drive Clean program too costly

A GROUNDBREAKING STUDY released by Guelph economist John Livernois in 2007 recommends provincial policy changes that could save millions of dollars for Ontario consumers. He and student Arian Khaleghi Moghadam conducted the first evaluation of the cost-effectiveness of Ontario's Drive Clean Program. It costs drivers $131 million a year, yet fewer than 10 per cent of vehicles fail the test.

Currently, vehicles between five and 12 years of age undergo an emission test every two years. Vehicles older than 12 years must be tested annually. Livernois and Moghadam say the province could achieve 70 per cent of emission reduction at one-fifth the cost if it limited testing to vehicles between six and 15 years old. Relaxing the policy would lead to a little more pollution but large cost savings, says Livernois. "These cost savings could then be allocated to a more effective pollution-reduction program such as public transit."

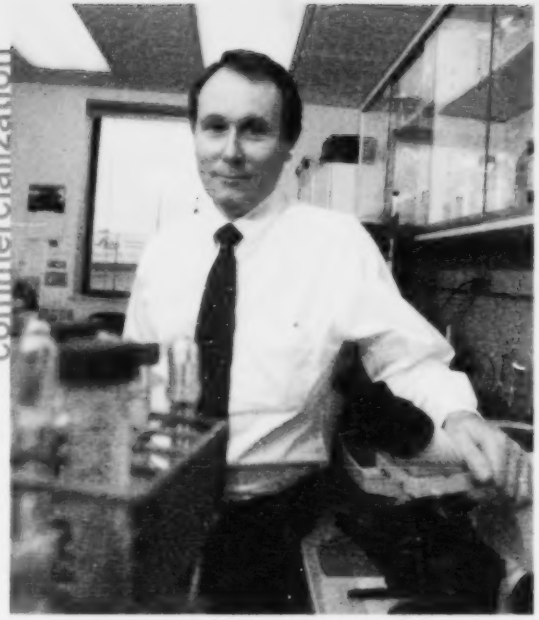
commerce m

Canada's economy benefits from **University of Guelph** innovation and expertise, but equally important is our role in educating business leaders for today's global challenges.

Building a bioeconomy

Prof. Amar Mohanty came from Michigan State University to U of G, where he holds the Premier's Research Chair in Biomaterials and Transportation. His research will help to create a culture of innovation in biomaterials research and strengthen Ontario's economic advantage in this fast-growing area. Mohanty, who is the author of 129 peer-reviewed journal papers and has four U.S. patents and more than 20 patent applications pending, says biomaterials will revolutionize the use of agricultural products for industrial uses, ranging from car parts and building materials to fuel.

His lab focuses on developing bio-based materials and biofuels to provide sustainable alternatives to petroleum-based resources. "This is an appropriate time for a 'bio-based economy' to be explored in the context of depleting petroleum resources, global warming, greenhouse gas emissions, growing environmental threats and national security," he says.



New technology heads to market

William Gastle, CEO of Microbix Biosystems Inc., is commercializing a U of G technology that has the potential to revolutionize the livestock industry by allowing breeders to predetermine the sex of offspring prior to conception.

Developed by Prof. Stan Blecher, a retired physician and U of G professor emeritus of molecular biology and genetics and human biology, the sperm-sexing technology (SST) will be marketed specifically to the swine, dairy and beef artificial insemination (AI) industry. Swine producers generally prefer females for their higher feed efficiency. Dairy farmers need females for milk, and beef farmers prefer males for larger muscles.

SST does not involve genetic modification and is non-invasive. It can be easily integrated into existing production systems and could prove to be the most significant breakthrough since the introduction of AI 50 years ago.

atters

Good business

Auto industry

Plant agriculture professors Istvan Rajcan and Gary Ablett say soybean oil could become a staple in the auto industry — not just for biodiesel fuel but also as a source of composite materials used to make interior car parts. They are trying to boost the oil yield from soybeans to give manufacturers a cheaper and greener alternative to petroleum-based chemicals.

Maple roots

Prof. Statia Elliott, Hospitality and Tourism Management, studies how countries can brand themselves to be better positioned internationally. "Canada has a positive tourism destination image compared with the United States, Australia and Japan," she says, "but we have a weaker product image." She says this image is underutilized: "We should show off our maple roots more often."

Student invention is a winner

invention

NINE-YEAR-OLD Lauren Turner was the inspiration for a group of Guelph engineering students who designed a single-hand bicycle-brake lever that took them all the way to New York City. On April 10, the team of Andrew Morris, Anina Sakaguchi, Micha Wallace and Katie Bell was named runner-up in the international competition for the James Dyson Design Award.

The Guelph students competed against 12 finalists chosen from national competitions in 14 countries and were judged by Dyson himself.

The braking system allows Turner, who was born without fingers on her left hand, to ride and safely stop a multi-speed bike. The lever combines both the front and back brakes into the same handle using linkages. The project was supervised by Prof. John Runciman, whose daughter is one of Turner's school friends. He's also pursuing patent protection for the student design through U of G's Business Development Office.

Mushrooms grow profit

PROF. RON FLEMING OF U OF G'S Ridgetown Campus has found that the leftover organic substrate used to grow mushrooms — a manure-based material — can provide an additional income source. On a world scale, about 13.6 million tonnes of substrate are produced each year, he says. Normally it's disposed of or spread on farmland. The problem is that the mushroom substrate has a higher salt content than other composts. This can put some limitations on how the compost can be used and generates concerns about the potential contamination of surface and groundwater, says Fleming.

Asked by the Canadian Mushroom Growers' Association to find other options to deal with the substrate, Fleming developed a complete composting process that improves the soil application qualities of spent mushroom substrate, and it's safer for the environment. The substrate was mixed and aerated for four weeks to create premium compost that sells in bulk for up to $60 per tonne.

Interviews **Geoffrey Smith, assistant dean of the College of Management and Economics, says it's an uneven playing field when it comes to job interviews in Canada. His study shows 78 per cent of human resources professionals admit they stray from predetermined questions and prompt struggling candidates.**

Community development

Audrey Jamal, BA '98, recently returned to Guelph as executive director of the Downtown Guelph Business Association after working with the Canadian Arab Federation and then as an advocate for people with disabilities. She says her new job allows her to examine social, economic and environmental issues and use her U of G education to better her community.

Shopping

Consumer studies professor Sunghwan Yi wants to know what makes some of us more addicted to shopping than others. Just like with a drug, the high of an impulse purchase doesn't last and is often followed by feelings of regret, guilt and shame. Yi is studying impulse buyers because many of them eventually become compulsive buyers who have little control over their spending.

consumers

Ethical codes not working

According to the Conference Board of Canada, more than 85 per cent of Canadian companies have ethical codes of conduct, but Prof. Scott Colwell of the Department of Marketing and Consumer Studies says many of those policies don't seem to be working.

Colwell worked with Michael Zyphur of the National University of Singapore to survey purchasing managers at 158 large Canadian corporations. Forty-two per cent of the managers rated their suppliers as poor to moderate in trustworthiness, and 34 per cent rated their suppliers as exhibiting moderate to high levels of opportunistic behaviours.

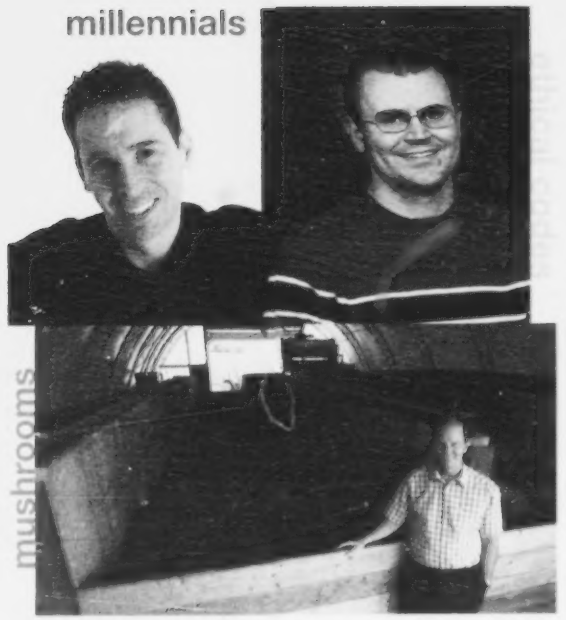
"Ethical codes of conduct may have become merely advertising tools to build trust in potential buyers," says Colwell. The problem is that as the buyer's commitment grows, so do the costs of switching to another supplier. So once a business relationship has been established, unethical conduct is often tolerated.

New hires baffle employers

U of G business professor Sean Lyons says the way you approach your workday may depend on when you were born. Whether you're a baby boomer, a Generation X'er or a millennial worker who's relatively new to the world of employment, Lyons says your attitude toward your career can be traced to the social and economic climate of your formative years.

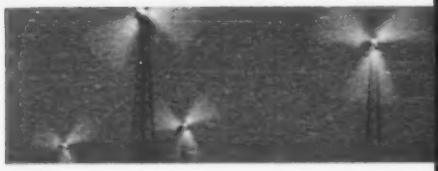
This has resulted in many issues in the workplace and employers struggling to understand how to manage workers of different generations, especially the newest cohort of employees who have high expectations and talk openly about job-hopping. "I'm getting frantic calls from employers saying they're having difficulty recruiting new hires. They haven't done any major hiring in 15 years, and now they're hiring this new generation and they don't know what to do. Neither side knows the other's expectations, and it's created a situation where help is needed to bridge the gap."

millennials



mushrooms

Don Quixote **Windmill farms are cropping up faster than some rural municipalities can plan for, so Guelph landscape architects Jim Taylor and Robert Corry have developed guidelines to help communities incorporate the towering structures without sacrificing idyllic landscapes and future development.**



Top students

Bachelor of commerce students Kwasi Danso and Jonathan Wolff finished second in the national Wes Nichol Entrepreneurial Award competition in May for their idea to manufacture and

biodegradable

distribute plastics that will fully biodegrade within nine months to five years. Their company, Green Solutions, is now finalizing contracts with a manufacturer to develop its own brand of products — cutlery, dishes and packaging.

World Bank

As a leading centre of Canadian research on agriculture and development, U of G was asked to comment on the World Bank's 2008 report, focused on agriculture for development.

Electricity

Economics professor Talet Genc submitted a report to *Energy Economics* on the implications of deregulating Ontario's electricity market. He says adding even two more suppliers to the provincial energy market would reduce electricity prices by 21 per cent and create a more dependable power supply.

Ethical codes not working

According to the Conference Board of Canada, more than 85 per cent of Canadian companies have ethical codes of conduct, but Prof. Scott Colwell of the Department of Marketing and Consumer Studies says many of those policies don't seem to be working.

Colwell worked with Michael Zyphiat of the National University of Singapore to survey purchasing managers at 158 large Canadian corporations. Forty-two per cent of the managers rated their suppliers as poor to moderate in trustworthiness, and 44 per cent rated their suppliers as exhibiting moderate to high levels of opportunistic behaviours.

"Ethical codes of conduct may have become merely advertising tools to build trust in potential buyers," says Colwell. The problem is that as the buyer's commitment grows, so do the costs of switching to another supplier. So once a business relationship has been established, unethical conduct is often tolerated.

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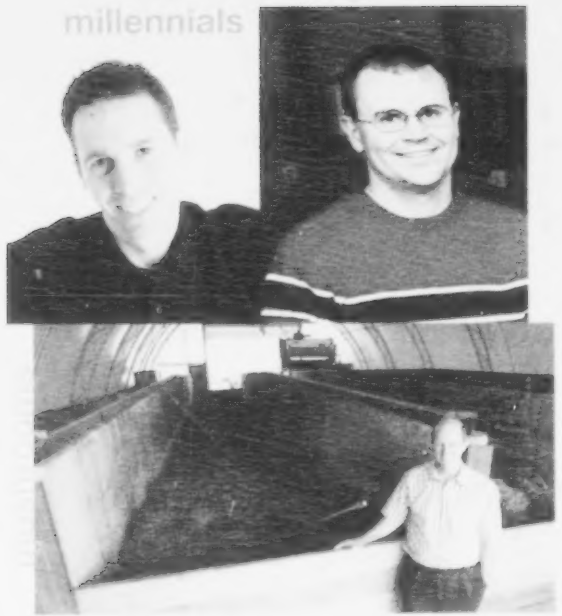


Don Quixote

Top students

B

biodegradable

World Bank

A

Electricity

E

Donor investments increase

PRACTICAL BENEVOLENCE is part of the University of Guelph culture, says Joanne Shoveller, vice-president (alumni affairs and development).

"I see this on a daily basis. The philanthropy of our students, faculty, president, alumni, friends and supporters is a critical part of the legacy we are continuing to grow on campus. Our students break national records in fundraising and food bank contributions, and our alumni remain dedicated to raising money for their alma mater and the wonderful students it develops."

Shoveller notes that the University received $13.6 million in donations from alumni and friends in 2007. "Through this legacy of giving, we are helping Guelph scholars to build a better understanding of life around us, promote health for people, animals and the planet, and shape our future."

Students Holding National Scholarly Awards

Comprehensive Universities — Canada

Guelph	4.4 per 1,000
National	4.0 per 1,000

Student Services Expenditures

Comprehensive Universities — Canada

Guelph	5.7%
National	4.5%

Student Success: Percentage Who Graduate

Comprehensive Universities — Canada

Guelph	79.3%
National	65.2%

our performa

The University of Guelph has balanced academic, physical and financial planning to ensure the quality of its resources and accountability to its stakeholders.

OVC has big ideas

The Ontario Veterinary College turned sod on some highly anticipated construction projects that herald a new era in the college's nearly 150-year history.

"This transformation isn't only about bricks and mortar," says dean Elizabeth Stone. "It's also about people and programs and the role we see for ourselves and for our profession in society."

Building a new large-animal isolation unit and a new facilty to house the Department of Pathobiology and the Animal Health Lab are the first steps in a revitalization program that will create the OVC Health Sciences Centre. Described as a kind of Mayo Clinic for animals, the concept describes the role of OVC in health-care education, research and service delivery and speaks to the importance of veterinary medicine as a protector of public health and a contributor to health-care advances that benefit both animals and humans.

Ontario must pursue quality

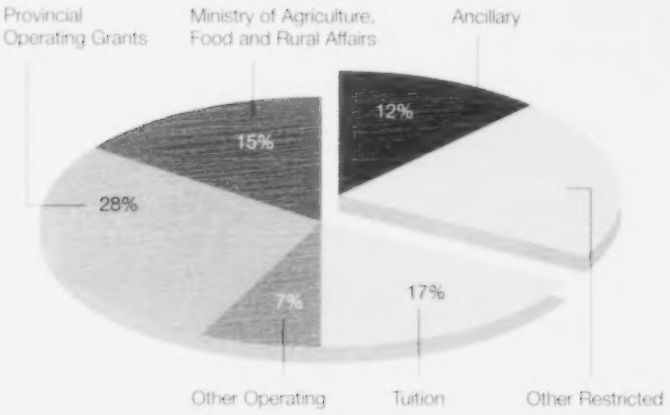
The University of Guelph was ranked fourth overall and second in reputation in the annual *Maclean's* rankings released Nov. 8. Although the magazine's editors said the margins separating the top four schools were minimal, U of G president Alastair Summerlee noted that most Ontario schools were surpassed in *Maclean's* by universities outside the province. This points to the importance of the provincial government's investment in universities, he says.

Ontario is currently fulfilling a multi-year investment in accessibility. It has also provided funds to help universities complete overdue repairs and has invested in research infrastructure that will advance Ontario's status in the knowledge economy.

"We now need to focus on support for quality improvements," says Summerlee, "to ensure that operating budgets can provide the high-quality education our students deserve."

University revenue 2006 / 2007

Total Revenue — $567 million
Operating Revenue — $381.4 million
Ancillary and Restricted Revenue — $185.6 million



nce matters

See audited financial statements for fiscal 2006/2007 at www.fin.uoguelph.ca.

accolades

Top marks

In the 2007 University Report Card published in the *Globe and Mail* (it interviews more than 43,000 undergraduate students in Canada), Guelph was ranked No. 1 or tied for first in several key areas, including quality of education, faculty member's knowledge and availability, sense of personal safety and security, campus atmosphere, quality of academic advising and overall satisfaction with the university experience.

Great Canadian

Chancellor Pamela Wallin was appointed to the Order of Canada in 2007 and was named Canadian of the Year at Guelph's Our Lady of Lourdes High School.

Yates Cup

The Guelph Gryphons hosted the Yates Cup provincial football final Nov. 10, but lost the championship game to the Western Mustangs.

Exemplary Staff

Fifteen University staff who go above and beyond the call of duty were nominated by their peers in 2007 and recognized with a President's Award for Exemplary Service.

OVC has big ideas

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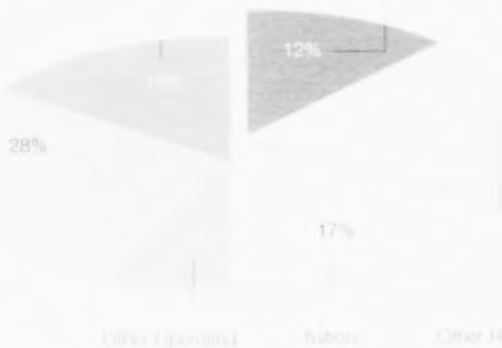
"We now need to focus on support for quality improvements," says Summerlee. "To ensure that operating budgets can provide the high-quality education our students deserve."

University revenue 2006 / 2007

Total Revenue — $581 million
Operating Revenue — $261.3 million
Ancillary and Restricted Revenue — $185.6 million



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Top marks

Great Canadian

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Exemplary Staff

accolades

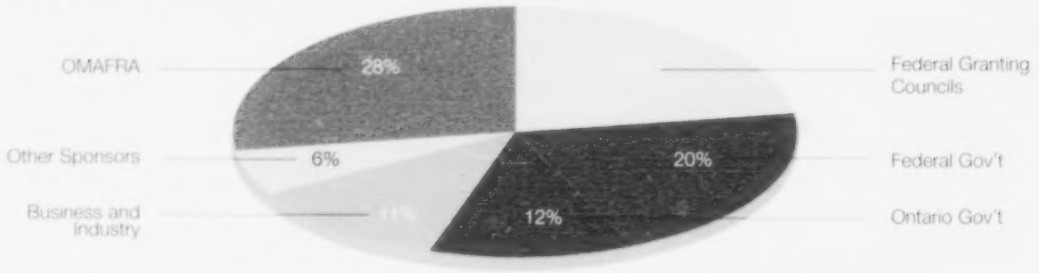
Investment returns billions

AN ECONOMIC ANALYSIS released by Deloitte and Touche LLP says the partnership between the University of Guelph and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has tremendous economic impact, returning more than a billion dollars a year to the province. The partnership returns about $20 in provincial economic impact for every $1 invested by OMAFRA.

Deloitte and Touche also said Ontario is benefiting from the agreement in critical ways that cannot be fiscally quantified, such as supporting research involving the monitoring and prevention of health threats like SARS, avian flu and mad cow disease.

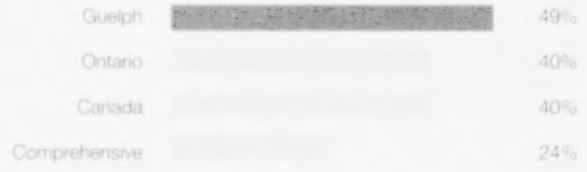
Under the agreement, the University manages research and education programs and related facilities. In April, the partnership was renewed for another 10 years, with $300 million to be provided in the first five years.

Sponsored Research Revenue — $128.4 million



Research Intensity

Research revenue as a percentage of operating revenue



Science / Medical Research Grant Success

Dollars per Faculty (rounded to nearest $100)

Reputation **Applications to U of G and the University of Guelph-Humber are up more than 14 per cent this year — nearly triple the system average — according the Ontario Universities' Application Centre. In addition, the number of applicants who named U of G or Guelph-Humber their "first choice" rose nearly 19 per cent.**

First in research

For the fourth consecutive year, U of G was named "Research University of the Year" in October by Research Infosource Inc. The ranking is based on total sponsored research income, faculty accomplishments and the impact of published research.

Research Infosource also published its annual "Top 50 Research Universities" list, which ranks Canadian universities solely on sponsored research. In that survey, Guelph was the top comprehensive university for the sixth year in a row.

U of G researchers explore both the science of life and the art of living, building our understanding of what makes up life on Earth and how human interactions ultimately determine the quality of life we enjoy.

Geographically, U of G research spans the province from the main campus to the regional campuses at Ridgetown, Kemptville and Alfred; 19 field stations; veterinary and regulatory laboratories; and an industrial Research Park.

Faculty excellence

Guelph faculty are among the most successful in attracting grants from the Social Sciences and Humanities Research Council. Guelph's 2007 per capita SSHRC funding exceeded the national average by more than 40 per cent.

Investment returns billions

Sponsored Research Revenue — $128.4 million

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First in research

Faculty excellence

University Administration

Alastair Summerlee, President and vice-chancellor
Steven Liss, Interim vice-president (research)
Maureen Mancuso, Provost and vice-president (academic)
Joanne Shoveller, Vice-president (alumni affairs and development)
Nancy Sullivan, Vice-president (finance and administration)
Serge Desmarais, Associate vice-president (academic)
Rich Moccia, Interim associate vice-president (research) agri-food and partnerships
Brenda Whiteside, Associate vice-president (student affairs)
Bob Carter, Assistant vice-president (physical resources)
Anthony Clarke, Assistant vice-president (academic)
Martha Harley, Assistant vice-president (human resources)
John Miles, Assistant vice-president (finance and services)
Brian Pettigrew, Assistant vice-president (institutional research and planning) and registrar
Don Bruce, Dean, College of Arts
Robert Gordon, Dean, Ontario Agricultural College as of August 1, 2008
Michael Emes, Dean, College of Biological Science
Isobel Heathcote, Dean of Graduate Studies
Alun Joseph, Dean, College of Social and Applied Human Sciences
Chris McKenna, Dean, College of Management and Economics
Elizabeth Stone, Dean, Ontario Veterinary College
Anthony Vannelli, Dean, College of Physical and Engineering Science
Michael Ridley, Chief information officer and chief librarian
John Walsh, Vice-provost and CAO, University of Guelph-Humber
Vicki Hodgkinson, University secretary

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Endowment Continued donations from alumni and friends have helped the University's restricted endowment funds grow to $184.9 million.

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Alastair Summerlee, President and vice-chancellor, University of Guelph
F. Michael Walsh, Retired executive

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OUR ENVIRONMENTAL FOOTPRINT MATTERS

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About U of G

- The University of Guelph was established in 1964, but its history dates back more than 145 years through the founding colleges of veterinary medicine, agriculture and home science.
- The University of Guelph has 18,000 students on its main campus, 2,400 undergraduates at the University of Guelph-Humber and 800 diploma students at campuses in Alfred, Kemptville and Ridgetown.
- Guelph's main campus spans 412 hectares, including a 165-hectare arboretum and a 12-hectare research park.
- University of Guelph research enterprises are spread across the province through it's five campuses and 19 research stations that manage another 2,500 hectares of land.
- Guelph's enrolment includes more than 700 international students from 100 countries.
- The office of Open Learning has more than 50,000 enrolments each year in distance education and continuing education courses and certificate programs.

UNIVERSITY of GUELPH
CHANGING LIVES IMPROVING LIFE